Title	Electron Microscopic Studies on Alkaline Earth Carbonates. (I) : Formation by Carbonic Acid Gas Method
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call "*U*-effect I". In the case of glass-liquid interface we call it "U-effect I", and in the case of mercury-solution interfaces "*U*-effect II". The former is an effect of a.c. streaming potential generation and the latter is attributed to the periodical charging and discharging current of the interfacial double layer capacity.

U-effect is applicable to all sorts of mechano-electric transducers, and it was proved that the apparatuses applying it were equally matched to those of Rochelle salt. Moreover, with regard to resistance against humidity and temperature change or easiness of fabrication, which Rochelle salt lacked, our device was superior.

U-effect I can be used to measure streaming potentials by a.c. technique, which will provide more conventional method of its measurement by farther improvement.

Counter *U*-effect can be observed by interchanging the input and output terminals of the elements. This gives an electroacoustical transducer, although the efficiency is very small.

Electron Microscopic Studies on Alkaline Earth Carbonates. (I)

Formation by Carbonic Acid Gas Method

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Calcium, strontium, and barium carbonates were prepared by introducing bubbles carbon dioxide gas into their hydroxide solutions or suspensions. Mixed carbonates were also prepared from the mixture of the hydroxides. The pH of the reaction mixture was about 12.5 at the outset and was almost constant during the course of the reaction and decreased rapidly directly before the end of the reaction. The rate of the formation reaction of barium carbonate was measured by titration and the reaction seemed to be nearly zero-order. Generally speaking, the reaction velocity was independent of the concentration of hydroxide and decreased with decreasing concentration of carbon dioxide gas. The reaction velocity was minimum at about 30°C. When the reaction mixture was suspension before the reaction, the reaction velocity was dependent on the dissolution velocity of hydroxide and decreased with increasing content of calcium hydroxide. Formation of calcium carbonate in the presence of strontium or barium hydroxide occurred after that of strontium carbonate or barium carbonate.